









# LECTURE

INTRODUCTORY TO THE COURSE

OF

## ORTHOPÆDIC SURGERY,

DELIVERED AT BELLEVUE HOSPITAL  
MEDICAL COLLEGE,

BY

PROFESSOR LEWIS A. SAYRE.

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BELLEVUE HOSPITAL MEDICAL COLLEGE,  
New York City, Nov. 5, 1867.

PROF. LEWIS A. SAYRE.

DEAR SIR—At a meeting of the class of Bellevue Hospital Medical College held this day, Ed. C. Harwood, Chairman, C. G. Steadman, Secretary, we were appointed a committee to solicit a copy of your Lecture introductory to the course of Orthopædic Surgery, for publication.

Hoping that this request will meet with favor, we have the pleasure of remaining,

Very respectfully yours,

E. D. FERGUSON,  
JOHN V. BEAN,  
GEORGE W. WELLS,  
*Committee.*



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No. 285 Fifth Avenue,  
New York, Nov. 7, 1867.

Messrs. E. D. FERGUSON, JOHN V. BEAN, GEORGE W.  
WELLS, Committee.

GENTLEMEN.—I have received your letter of November 5, requesting a copy of my “Introductory Lecture on Orthopædic Surgery” at “Bellevue Hospital Medical College,” for publication by the class, with which request I cheerfully comply.

Let the illustrious names that I have given in this brief sketch of the rise and progress of Orthopædic Surgery, serve as examples for your imitation, and that you may arrive at the same enviable distinction, by being equal contributors, to the improvement of professional science, and the relief of human suffering, is the best wish of

Your sincere friend,

LEWIS A. SAYRE.



# LECTURE.

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GENTLEMEN: The Faculty of this College, have intrusted me with the very important duty, and I may say pleasure (for there is no pleasure equal to that of imparting knowledge for the good of our fellow man), of instructing you on the subject of the deformities of the human frame.

I propose to do this in a series of theoretical and clinical lectures. In the former I shall endeavor to render you familiar with the nature, causes, diagnosis and general treatment of deformities; and in the latter, I shall place before you abundant clinical material, and offer you ample opportunities to realize and test the practical bearing and application of the abstract principles which I shall endeavor to teach.

In this combination, you cannot fail to master the subject thoroughly, and to prepare yourselves efficiently for the performance of your future duty, in this particular branch of your profession.

Heretofore, our subject has not received that attention at the hands of medical teachers it so eminently deserved. Students met with few opportunities to

study it, either in theory or practice, and the profession at large was hardly prepared to take charge of deformities and treat them successfully. For this reason they were left to mere mechanics or professional pretenders, who, if they could construct any sort of machine, professed to cure all kinds of deformities.

Any one at all acquainted with the importance and magnitude of this branch of surgery, will not for a moment question the propriety of treating it under a special head, and constituting it the sole object of a professorial chair.

This is, I believe, the first attempt to establish a special professorship for orthopædic surgery; and I am happy to see that our good example is being followed by other institutions, as such teaching must necessarily enhance the value of the instruction students will receive from their "Alma Mater."

My lectures, however, will form but a very subordinate part of the plan of instruction. I am restricted in the time allotted for the purpose, and this fact must necessarily determine the character of my lectures. I shall have no time to indulge in unproductive speculation and hypothesis. My lectures will be brief and concise, and I shall endeavor to make them preëminently practical, illustrating them by cases bearing upon the rules which I shall endeavor to lay down, and even from my private practice, as well as from the hospital, to illustrate to you practically, what I shall strive to inculcate theoretically.

I can hardly lay stress enough upon the necessity of your attention, to these practical, clinical illustrations of the theories inculcated. What I lay down to you in theory, if you should chance to lose it, you may, if God spares your lives, sometime find an opportunity to study out for yourselves, or hear from another, probably very much better expressed than by myself; but if you neglect the practical cases, which come up before us, the loss can never be repaired. Therefore you must give your close attention to these cases, and no

matter how much you may neglect the lectures, *watch* carefully the *cases*, lest you never find another opportunity to see them. They are the great unfailing tests, which you have placed before you ; the practical tests by which you may know whether I am correct in the principles which I endeavor to inculcate.

I wish therefore to urge upon you again, to neglect no opportunity of improving the time, by strict attention to the clinical instruction, which I may be enabled to give you.

As I have said before, if you lose a lecture, you may make it up, but if you lose a clinical case, you can never make *that* up ; for, when the time comes, when you would repair the damage, the living illustrations of disease have departed, and the peculiar manifestations of the symptoms they have developed, have been lost to you forever.

The importance of studying the treatment of deformities was admitted by the ancients, for we have from Hippocrates himself, who has been styled the " Father of Medicine," a treatise " On Articulations," in which he taught the proper method of bandaging, in cases of infantile deformity of club-foot, which even in this day might be employed with advantage ; for any theory of treatment founded upon correct ideas, remains true forever. Celsus described the radical cure of hare-lip, which, with various other congenital deformities, are now similarly treated. As time went on, various persons attempted to ascertain the correct method of remedying deformities of the human frame. Empirics, and pretenders of all sorts, appeared from time to time, who professed to have discovered " the true secret," and as there has always existed, and still exists, in the human mind, a disposition to admire the marvelous, and to be governed by decided assertion, without proper and careful investigation into facts, so men then, as now, became the dupes of the designing quack, who flourished and grew important through their weakness.

This tendency of human nature has shown itself,

however, quite as much in other branches of the medical art, as in that of Orthopædy. Nothing can check this, but the proper education of the mind, whereby it is accustomed to examine and study into the *truth*. of every proposition presented for its consideration.

Pretenders and quacks, invariably publish accounts of their wonderful cures, and the miracles they have performed, never laying down any laws or reasons, to aid another in performing the same cure in similar cases. And this, gentlemen, constitutes one of the essential differences between an honorable physician and the quack. The one labors to disseminate and diffuse his knowledge, for the benefit of his whole profession, in order that he may relieve as much of human suffering as is within his power; the other endeavors to conceal the little knowledge he may possess, for his own particular profit or gain.

Professor Andry, of Paris, is looked upon as the founder of Orthopædy, from the fact that he was the first who attempted to comprise all the deformities of the human frame *under one head*, and adopted this comprehensive appellation, Orthopædy, from *ορθός* straight, and *παιδεῖω*, to educate. He tried to find out their common causes, and establish general principles and indications for their efficient treatment; and published his work, “L’Orthopædie, ou l’Art de prevenir et de corriger dans les Enfans les Deformites du Corp,” at Paris, in 1741.

Andreas Venel, of Switzerland, in 1780, established an institution in which he treated deformities of the human frame,—club-foot, spinal curvature, etc.

In the year 1789, Thilenius, a physician of Frankfurt, described the division of a contracted *Tendo-Achillis*. The operation here first described by Thilenius, was, in fact, performed by Lorenz, who performed the operation on the 26th March, 1782; but as Thilenius first described it, he has generally been thought the first to have performed it. Scarpa, in 1803, applied an apparatus for the relief of a distorted foot. Michælis and Sartorius,

also divided contracted tendons. Dupuytren and Delpech also investigated and labored in the same cause, without, however, accomplishing all they desired. Stromeyer, in 1830, discovered *subcutaneous tenotomy*, and its application to club-foot, and established it as a principle in operative surgery. Possessed of great talent, ardor, and energy, he caused his discovery to be generally adopted, and many great cures have been effected by it. Yet, in the progress of time, we have learned still more; and in my own experience, I have been enabled to test the correctness of the now established principle, of *extending a contracted muscle*, by the *constant* application of an elastic force, moderately, but persistently applied; which will, in the majority of instances, accomplish the object fully as efficiently as by tenotomy, or section of the tendon.

In all such cases, where this object can be accomplished in this way, it is infinitely better for the future usefulness of the joint involved, although sometimes much more tedious in producing the result.

The advantages of elastic extension, by means of india-rubber, has been practiced by me, ever since my pupilage, having been taught its value, by my preceptor, the late Dr. David Green. The difficulty in its application, in many instances, without expensive and cumbersome machinery, to secure its attachment, in order to obtain its force, was the only obstacle to its universal employment.

This difficulty has been happily overcome, within a few years past, by the simple yet beautiful contrivance, first suggested by Mr. Barwell, of London, whereby we can secure the attachment, for the origin and insertion of the elastic power, to any part of the body, by the use of small strips of tin, made permanent at the place desired, by means of adhesive plaster and a roller. By this simple, yet neat contrivance, we can imitate the action of almost all the muscles of locomotion, of any part of the body. Being rid of the weight of cumbersome machinery, which is so serious an inconven-



ience in all paralytic deformities, and its persistent action, during the hours of sleep, which is Nature's anæsthesia, when opposition to its force is so materially removed, renders it an agent of most wonderful power, capable of overcoming an immense number of serious deformities.

This simple, yet beautiful suggestion of Barwell's, will make almost as great an advance in orthopædic practice, as did the suggestion of Stromeier of subcutaneous tenotomy. The rules for its application and the diagnostic differences of the cases, where it is applicable, from those where the knife becomes a necessity, I shall lay down more fully in my future lectures.

The names of Brückner, Camper, Wenzel, Palletta, Jackson, Sömmering, Heine, and others, must not be forgotten, as each one assisted to develop scientific knowledge and orthopædic surgery. Also, Dieffenbach, Langenbeck, and many others in Germany, accomplished much; whilst in France we find those of Guerin, Marjolin, Major, Delpech, and Malgaigne, conspicuous.

In England, Dr. Little stands preëminent, having introduced orthopædy into that country. Having suffered himself from congenital club-foot, he knew how to estimate the relief afforded; and to his exertions and energy, London owes the establishment of the Royal Orthopædic Hospital, No. 6 Bloomsbury Square. Within the first ten years succeeding its establishment, *twelve thousand* patients were there treated, which alone is a proof of its necessity. Dr. Little's colleagues Tamplin, Lonsdale, Broadhurst and Adams, have also done good service in the cause of orthopædic surgery and science. Thus we see what energy and perseverance can accomplish; and it should serve as a beacon-light to others so placed.

In our own country orthopædy met with very serious obstacles. The profession at that time being seriously opposed to any innovation, and particularly to any subdivision of medical science into specialties. And many



medical men of even great professional attainments, unwilling or unable to take the tedious trouble of attending to serious cases of deformity, would recommend such cases to various instrument-makers in order to get rid of them; and these, mere mechanics, sustained by such recommendation, soon began to assume the *name* and responsibilities of *Doctor*, and would undertake the *treatment* of deformities, instead of adhering to their legitimate business, which was the manufacture of such instrumental aids, as an intelligent surgeon might devise.

The injury thus inflicted on medical science, and professional honor, can only be properly appreciated by those, who like myself, have had frequent opportunity to witness its disastrous results.

Dr. David L. Rogers was the first to perform tenotomy in this country; he divided the tendo-Achillis, in 1834, assisted by my colleague, Professor James R. Wood.

Dr. Detmold, who is now a Professor of Orthopædic Surgery in the "College of Physicians and Surgeons" in this city, a German himself, and who had enjoyed the advantages of Professor Stromeyer's instruction in Germany, introduced among us subcutaneous myotomy in 1837, three years subsequent to the introduction of tenotomy by Dr. Rogers, and made zealous efforts to render us conversant with its technicalities and therapeutic efficacy.

Dr. Valentine Mott, in his "Travels in the East and in Europe," published in 1842, expressed himself in the highest terms of admiration of orthopædic art, as he had seen it in Paris. It is but just to this distinguished surgeon, that I should quote from his narrative, above referred to, in order to show how immeasurably he was in advance of the profession at that time. In fact, in his declining years, we here see abundant evidence that he was still entitled to the appellation of a *pioneer*.

He says: "It was my happy lot, even at my advanc-

ing time of life, to have resided in this capital (Paris), and to have witnessed, also, the dawning, as well as the meridian splendor of another new and illustrious era in the healing art; I refer to that beautiful and exact science, *limitedly* denominated *Orthopædic Surgery*.

“This great improvement, both in mechanical and operative surgery, is destined to be to the human frame what *vaccination* is and has been to the human features. As the discovery of Jenner has rid the world of a loathsome pestilence, and banished from our sight those disfigurations which made the most lovely lineaments and complexions hideous to behold, so will orthopædic surgery, by its magic touch, unbind the fettered limbs, restore symmetry to the distorted form, give mobility to the imprisoned tongue, and directness to the orb of vision.

“Like many other of the glorious achievements of surgery, it is based upon such simple and self-evident principles that it cannot but be attractive, and carry home conviction to the plainest capacities. Its adoption must therefore be universal; and the more so, because liberally and extensively as the knife may be used, untwisting, as it literally does, the most misshapen and revolting and convoluted masses of deformity, by dividing deep, yet safely, under the skin, through the thickest and broadest muscles; yet are these operations, in many instances, almost *free from pain*, and without a *drop of blood*!

“And another remarkable feature, and one which gives the charm of magic to this truly brilliant triumph of our art, is the almost instantaneous restoration of every distorted part as soon as cut, and the righting of the limbs, the trunk and head, to their wonted beautiful symmetry and proportions, as the proud ship that has been *bent down* to the rude storm, recovers her position and resumes her stately course, when the shrouds have been cut away.”

And further on he says: “Having myself pursued this new branch, as a student with my friend Guerin

for the last three years, and personally traced it through every step of its rapid progress from its birthday, I may say to its present perfect condition, I have thought that I could in no manner so well express my gratitude to him, to my country and to my friends, for the kind feelings with which they have been pleased to cherish my name, as by attempting to found in this city of New York an American Orthopædic Institution, by which the principles and practice of that interesting science may be diffused far and wide through this my native land."

It was a great and melancholy misfortune, for our age and profession, that his career was so suddenly terminated; that thus the great desire of his life was not carried into practical execution.

Gentlemen, the ardent zeal with which this distinguished surgeon—the acknowledged head of his profession—devoted himself to the study of this new branch of the healing art, is well worthy of your admiration and imitation. We here see one whose name was already recorded in the undying history of surgery on its very brightest pages, and who had already won its most brilliant and unfading laurels, applying himself for three long years as a student under the distinguished French surgeon, Jules Guérin, in order that he might become a perfect master of this new art. Strange to say, we find at the present day some young gentlemen complaining that three years is almost *too* long to obtain a perfect knowledge of *all* the *different departments* of our profession. Yet a man who had devoted his life to this great work, who had more knowledge and reputation than almost any man our country has produced, and who had performed some of the most wonderful operations in the world, was thus willing to devote *three separate years* to that *one* branch of our profession.

You have in this fact exhibited one of the principal causes of this great man's most brilliant success. It was his constant and undeviating devotion to the study of his choice; his faithful application, and his unwea-

ried toil, his determination to master all that genius had conceived, or industry developed, which was *new* in the profession of his adoption, which might add to its utility or give the power of relieving human beings in suffering and misery. It is an example worthy your imitation, and will lead any young man, who will make it his model, to ultimate success and honorable distinction. Professor Lewis Bauer, of Brooklyn, a German surgeon of very scientific attainments, with an energy that knows no limit, has devoted himself almost exclusively to this department of surgery. In fact, the professional mind of this country has been attracted to this particular branch of surgery, through the various articles of this able author in the different medical periodicals, more than from any other source; and his lectures on this subject are a very valuable contribution to orthopædic literature.

Dr. Henry J. Bigelow, of Boston, published a work in 1845—it being a dissertation upon Orthopædic Surgery—which obtained the Boyleston Prize for 1844, and was written on the following question: “In what cases and to what extent is the Division of Muscles, Tendons, or other parts, proper for the relief of Deformity or Lameness?” It was written after studying the works of Guérin, Bonnet, Velpeau, Phillips, Duval and Little.

The word “Orthopædy,” as used by Andry, in Europe, has been considered as embracing the study of all deformities of the human frame, and in that enlarged sense we shall use it. The etymological composition of the technical term is evidently derived from *ὀρθός*, straight, and *παιδεῖω*, to educate; as such we shall adopt it and use it, thinking that to relieve deformities is to educate them straight.

At present Orthopædic Surgery is but imperfectly understood amongst us, and but few feel competent to practice it. It shall be our endeavor so to develop this department of surgery that no surgeon hereafter shall feel himself thoroughly educated in his profession, until he has also mastered this particular branch.

The importance of the subject, no one can deny, who pays the slightest attention to the numerous cases of malformation and deformity which we observe in every day life. You can scarcely walk a block in this crowded city, or visit any of the smaller towns and villages of our wide-spread country, without seeing one or more malformed or crippled sufferers, whose countenance bears the impress of mortified pride at their unfortunate condition, frequently connected with expressions of intense pain, produced by their abnormal physical position.

Deformities are divided into congenital and acquired. The congenital are again divided into congenital malformations and congenital distortions. The causes of congenital deformities are as yet wrapped in such deep mystery as to preclude the possibility of an accurate description, and can only be treated according to the condition of the patients at the time you find them. The acquired ones can frequently be prevented by early attention, but if neglected can be remedied, more or less, by science and artificial appliances afterwards.

The lame, the crooked, and deformed, are all influenced mentally by their misfortunes. In many instances, I have seen the strongest evidence of this influence upon the mind: one in particular I will mention, which is that of a young girl who was brought to me, to be treated for chorea in a very aggravated form. Upon examining her, I found her perfectly healthy in all respects, and was at a loss to discover a sufficient cause for her disease. Taking her by one hand, I perceived that she had an extra finger upon it, and upon mentioning it to her mother, the girl was immediately attacked with a violent convulsion, from which I found it very difficult to rally her.

Her mother begged that I would not notice this deformity, as her child was very sensitive upon the subject; and at the same time told me that both feet were also deformed, as she had supernumary toes upon each,



which had been kept concealed by a long dress. Upon her recovery from the fit, I asked her if she would not like to have her finger removed, and her hand made perfect like the other. At once her face lighted up with an expression of joy, as she replied, "Oh, yes! And can you cure my feet too?" Upon becoming convinced of the possibility of relief from her deformity, she became cheerful, courageous and self-sustained, a complete change coming over her (for she had appeared almost like a semi-idiot), and upon the successful removal of the extra toes and finger, the disease entirely left her, and she became a healthy, happy young woman, marrying soon after, and becoming a useful member of society.

This nervous disease, you will here perceive, was dependent entirely upon her physical deformity, and this case furnishes a strong proof of the necessity of attending early to the correction of any such malformations.

One source of acquired deformities, is acute and chronic inflammation of the joints, or articular disease, producing reflex muscular contractions, which frequently remain as permanent deformities, after the disease has subsided which gave rise to the contractions; and as the knowledge of how to *prevent* deformities, is equally as important as their treatment, this class of diseases will be very fully considered in our lectures, and the proper treatment indicated, for the various stages, of the different diseases to which they are liable.

Perfect and long-continued rest of even a healthy joint, will also produce deformity, by resulting in ankylosis. Another evidence of the laws of animal economy—action and motion being necessary for the preservation of healthy living tissue. The synovial fluid, which is secreted to lubricate a joint, is only formed when required; no waste in any of Nature's laws being permitted, and, therefore, there is no secretion when the joint is not in motion.

As the eye requires *light* to preserve its healthy func-

tion, so the joint requires *motion* to secure its normal condition ; and as the delicate orb of vision becomes blind when deprived of light, so the joint fails to secrete a healthy synovial fluid when deprived of its normal stimulus, which is motion.

In this our introductory lecture, we have not embraced all the causes of deformity, but they will be dealt with more fully as we proceed with our lectures.

You have adopted, gentlemen, a profession laborious beyond all others. One which requires the highest tone of honor and self-denial, and which demands the abandonment of ease and comfort in a very great degree. You are about to take upon yourselves the awful responsibility of the lives of others—to prepare yourselves to take that responsibility.

To whom much is given, of them much will be required, and as the labor is great, so is the reward. It is a great joy, probably the greatest of human pleasures, to see one whom disease has reduced to the utmost misery, revived and comforted by means of the knowledge which labor and study have enabled us to acquire. It places man nearer to his Creator, than any other power. It enables him to *do good* to others, obeying thereby the law divine. And this power is to be obtained *only* by perseverance, industry, and constant labor.

Give these and the reward is sure ; a greater and better reward is not granted to mortals. It gives a certain support in this world—respect and affection from those who are relieved, and undying gratitude from the poor and wretched whom you have benefited. It gives, moreover, that self-satisfaction which the power of relieving human suffering always must confer. But to obtain this pleasure, your hearts must be interested in the labor ; you must feel that the burden is light that brings such a glorious reward, and apply yourselves with untiring energy to the work.







